



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/721,380	11/26/2003	Tac-Kon Kim	Q77929	5999

23373 7590 04/24/2007
SUGHRUE MION, PLLC
2100 PENNSYLVANIA AVENUE, N.W.
SUITE 800
WASHINGTON, DC 20037

EXAMINER

VIANA DI PRISCO, GERMAN

ART UNIT	PAPER NUMBER
----------	--------------

2609

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/24/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/721,380

Applicant(s)

KIM, TAE-KON

Examiner

German Viana Di Prisco

Art Unit

2609

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Young et al. (United States Patent No.: 6,990,116 B1)

Consider claim 1, Young et al. show and disclose a method for increasing overall network throughput over a wireless LAN wherein the access point (AP) can dynamically

Art Unit: 2609

switch between distributed coordination function (DCF) and point coordination function (PCF) IEEE 802.11 access modes in response to the number of packets to be delivered in the queue at the AP (figure 6, abstract, column 8 lines 56-67, column 9 lines 1-6). Young et al. further disclose that the length of the contention free period and thus the contention period can vary within the contention free period repetition interval depending on the load over the network (column 8 lines 16-19).

Even though Young et al. do not specifically disclose verifying that if there is still data to be transmitted in the queue and transmit said data before entering the contention mode, Young et al. teach that the length of the contention-free period can vary depending on the number of packets in the queue which suggests the emptying of the queue during the contention-free mode and before entering the contention mode.

Therefore it would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to transmit the packets to be delivered in the queue of the access point before entering the contention period as disclosed by Young et al. in order to increase the overall network throughput.

Consider claim 2, and as applied to claim 1 above Young et al. show and disclose a method for increasing overall network throughput over a wireless LAN wherein the access point (AP) can dynamically switch between distributed coordination function (DCF) and point coordination function (PCF) IEEE 802.11 access modes in response to the number of packets to be delivered in the queue at the AP (figure 6,

Art Unit: 2609

abstract, column 8 lines 56-67, column 9 lines 1-6). Young et al. further disclose that the length of the contention free period and thus the contention period can vary within the contention free period repetition interval depending on the load over the network (column 8 lines 16-19).

Therefore it would have been obvious to a person of ordinary skill in the art, at the time the invention was made, that once the factor that triggered the switch to PCF access mode, namely number of packets to be delivered in the queue at the AP, has been addressed, i.e. no more packets to be delivered in the queue at the AP, the access mode can switch back to DCF as disclosed by Young et al. in order to provide fair access to all users of the wireless LAN.

Consider claim 3, and as applied to claim 1 above, Young et al. disclose the IEEE 802.11 point coordination function (PCF) that allows a point coordinator at the access point to directly control access to the wireless medium and prevent any of the wireless stations from accessing the medium unless they are polled and given access to the medium by the access point (column 7 lines 42-52).

Consider claim 4, and as applied to claim 3 above, Young et al. disclose the IEEE 802.11 point coordination function (PCF) wherein the point coordinator at the access point controls the transmissions from all the stations by gaining control of the medium after a predetermined PCF interframe space (PIFS) at the beginning of the

Art Unit: 2609

contention free period (column 7 lines 56-61). Young et al. further teach that the short interframe space (SIFS) has the highest priority for accessing the medium for sending acknowledgment frames (column 7 lines 64-67).

Consider claim 5, and as applied to claim 4 above, Young et al. disclose the IEEE 802.11 point coordination function (PCF) wherein the point coordinator at the access point controls the transmissions from all the stations by gaining control of the medium after a predetermined PCF interframe space (PIFS) at the beginning of the contention free period (column 7 lines 56-61). Young et al. further teach that since PIFS is shorter than DIFS, the point coordinator can gain and maintain control during the contention free period by waiting a shorter time for access to the medium than the stations which must wait for a DIFS period (column 7 line 67- column 8 line 5).

Consider claim 6, and as applied to claim 4 above, Young et al. disclose that the receiving station checks the cyclic redundancy check of the received packet and sends an acknowledgment packet to the transmitting station, and that if the transmitting station does not receive the acknowledgement packet (a predetermined period of timeout is inherently taught), it will continue to retransmit until the transmission is successful up to a given number of retransmissions (column 6 line 63 – column 7 line 3).

Art Unit: 2609

Consider claim 7, and as applied to claim 6 above, Young et al. disclose that the receiving station checks the cyclic redundancy check of the received packet and sends an acknowledgment packet to the transmitting station, and that if the transmitting station does not receive the acknowledgement packet (a predetermined period of timeout is inherently taught), it will continue to retransmit until the transmission is successful up to a given number of retransmissions upon which point the packets are discarded (column 6 line 63 – column 7 line 3).

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hautala et al. (Unites States Patent Application Publication No.: 2004/0013134 A1) discloses a method for contention free traffic detection. Ho et al. (United States Patent No.: 6,999,442 B1) disclose a method for setting up a downstream communication session in a basics service set in a wireless LAN such that the communication session has a defined quality of service. Kim (Unites States Patent Application Publication No.: 2002/0085582 A1) discloses a method in a wireless LAN in which packets requiring real-time transmission take priority over other packets to be transmitted on a network. Benveniste (Unites States Patent Application Publication No.: 2002/0163933 A1) discloses a method for priority-based shared channel access.

6. Any response to this Office Action should be **faxed to (571) 273-8300 or mailed to:**

Commissioner for Patents
P.O. Box 1450

Application/Control Number: 10/721,380

Page 7

Art Unit: 2609

Alexandria, VA 22313-1450

Hand-delivered responses should be brought to

Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

German Viana Di Prisco
G.V.D.P./gvdp

April 18, 2007

A handwritten signature in black ink, appearing to read 'German Viana Di Prisco', with a stylized, cursive script.